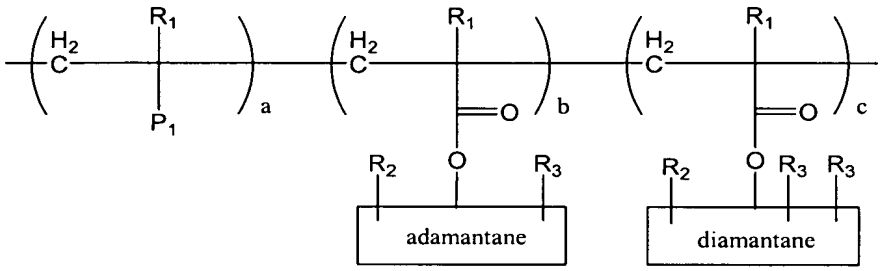
AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-42. (Canceled)

43. (Currently amended) A ~~positive-working~~ positive-acting photoresist composition comprising a base resin represented by the general formula:



wherein R_1 is selected from the group consisting of –H and $–CH_3$;

R_2 is selected from the group consisting of –H, an alkyl group having from 1 to 4 carbon atoms, and an alkoxy group having from 1 to 4 carbon atoms;

R_3 is –H, or a hydrophilic-enhancing moiety selected from the group consisting of a hydroxyl group –OH, a keto group =O, carboxylic acid group –COOH, and alkoxy group $–OR_4$, and a ~~lactone~~ group $–OC(O)OR_4$;

R_4 is $–CH_3$ or $–C_2H_5$;

a is 0.25 to 0.75;

b + c = 1 – a;

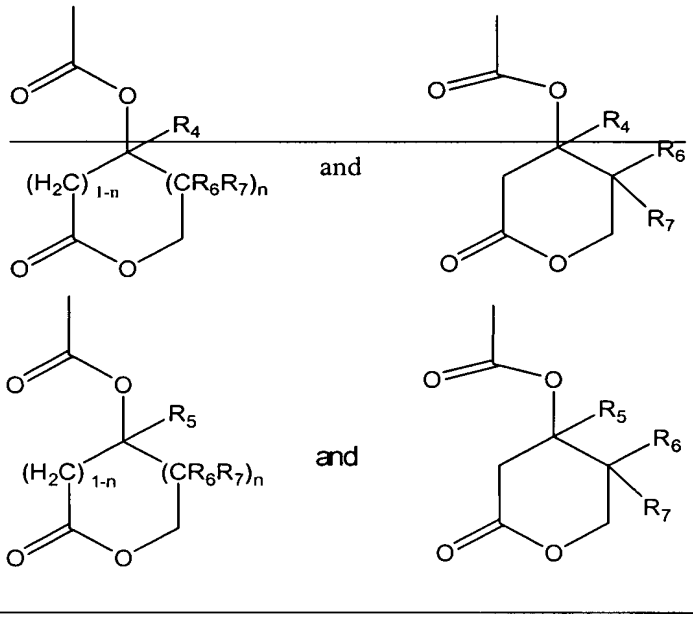
c is greater than zero; and

P_1 is a non-diamondoid, acid-cleavable pendant group.

44. (Original) The photoresist composition of claim 43, wherein b is about 0 and c is about 0.5.

45. (Original) The photoresist composition of claim 43, wherein P_1 is a lactone-containing pendant group.

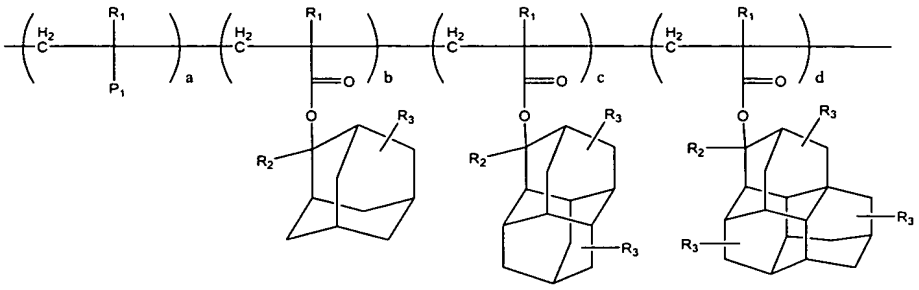
46. (Currently amended) The photoresist composition of claim 44, wherein P_1 is selected from the group consisting of:



wherein n is 0 or 1; and

~~R_4~~ $\underline{R_5}$, R_6, and R_7 are each individually selected from the group consisting of H, an alkyl group having from 1 to 4 carbon atoms, and an alkoxy group having from 1 to 4 carbon atoms.

47. (Currently amended) A ~~positive-working~~ positive-acting photoresist composition comprising a base resin having a monomer with a diamondoid-containing pendant group higher than adamantane, the base resin represented by the general formula:



wherein R_1 is selected from the group consisting of –H and $-CH_3$;

R_2 is selected from the group consisting of –H, an alkyl group having from 1 to 4 carbon atoms, and an alkoxy group having from 1 to 4 carbon atoms;

R_3 is –H, or a hydrophilic-enhancing moiety selected from the group consisting of a hydroxyl group –OH, a keto group =O, carboxylic acid group –COOH, and alkoxy group $-OR_4$, and a ~~lactone~~ group $-OC(O)OR_4$;

R_4 is $-CH_3$ or $-C_2H_5$;

a is 0.25 to 0.75;

b + c + d is substantially equal to 1 – a, wherein the base resin contains a monomer with a diamondoid-containing pendant group higher than adamantane; and

P_1 is a non-diamondoid, acid-cleavable pendant group.

48. (Original) The photoresist composition of claim 47, wherein c is about 0 to 0.25.

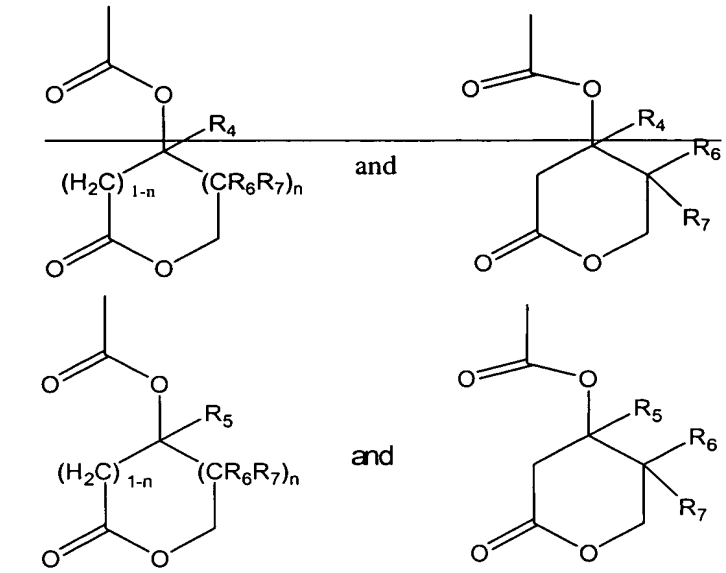
49. (Original) The photoresist composition of claim 47, wherein d is about 0 to 0.25.

50. (Cancelled)

51. (Cancelled)

52. (Original) The photoresist composition of claim 43, wherein P_1 is a lactone-containing pendant group.

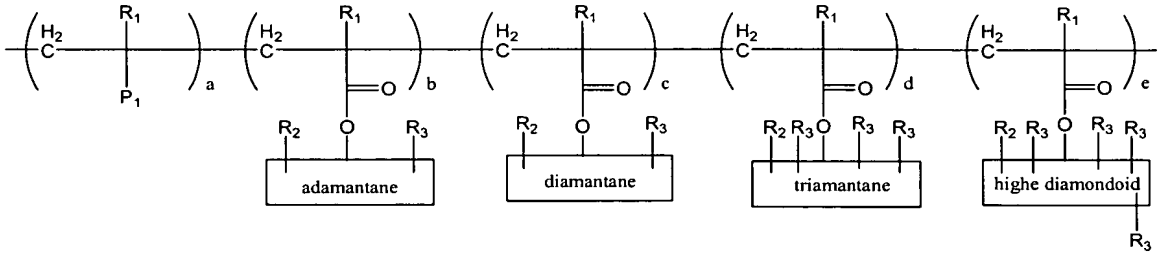
53. (Currently amended) The photoresist composition of claim 44, wherein P_1 is selected from the group consisting of:



wherein n is 0 or 1; and

~~R_4~~ R_5, R_6, and R_7 are each individually selected from the group consisting of H, an alkyl group having from 1 to 4 carbon atoms, and an alkoxy group having from one to 4 carbon atoms.

54. (Currently amended) A ~~positive-working~~ positive-acting photoresist composition comprising a base resin having a monomer with a diamondoid-containing pendant group higher than adamantane, the base resin represented by the general formula:



wherein R_1 is selected from the group consisting of –H and $–CH_3$;

R_2 is selected from the group consisting of –H, an alkyl group having from 1 to 4 carbon atoms, and an alkoxy group having from 1 to 4 carbon atoms;

R_3 is –H, or a hydrophilic-enhancing moiety selected from the group consisting of a hydroxyl group –OH, a keto group =O, carboxylic acid group –COOH, and alkoxy group –OR_4, and a group –$OC(O)OR_4$;

R_4 is $–CH_3$ or $–C_2H_5$;

a is 0.25 to 0.75;

b + c + d + e is substantially equal to 1 – a, wherein the base resin contains a monomer with a diamondoid-containing pendant group higher than adamantane; and

P_1 is a non-diamondoid, acid-cleavable pendant group.

55. (Original) The photoresist composition of claim 54, wherein c ranges from about 0 to 0.25.

56. (Original) The photoresist composition of claim 54, wherein d ranges from about 0 to 0.25.

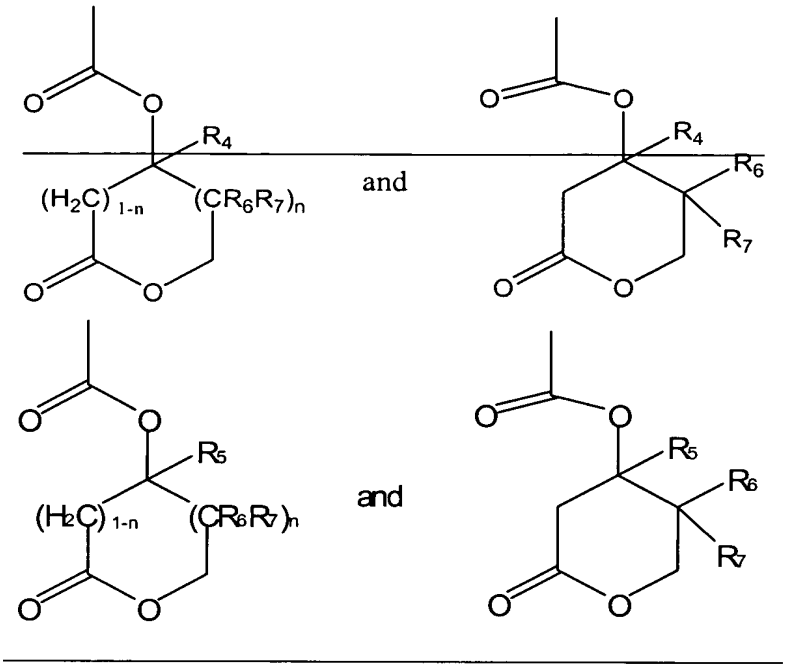
57. (Original) The photoresist composition of claim 54, wherein e ranges from about 0 to 0.25.

58. (Cancelled)

59. (Currently amended) The photoresist composition of claim 54, wherein b, the amount of the adamantane containing monomer, is about equal to c + d + e, the total amount of the diamantane, triamantane, and higher diamondoid-containing monomers.

60. (Original) The photoresist composition of claim 54, wherein P_1 is a lactone-containing pendant group.

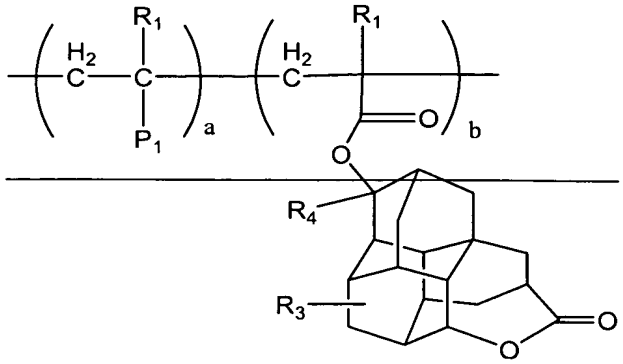
61. (Currently amended) The photoresist composition of claim 60, wherein P_1 is selected from the group consisting of:

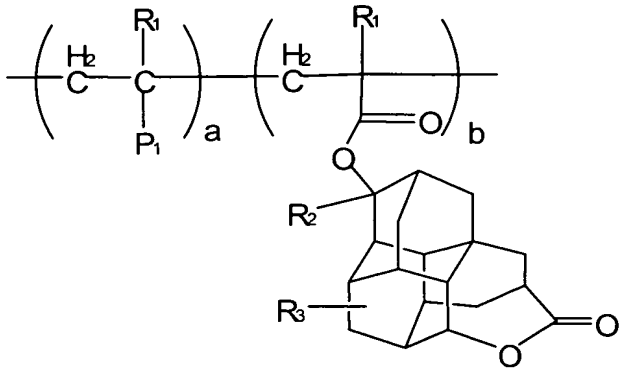


wherein n is 0 or 1; and

~~R_4~~ $\underline{R_5}$, R_6, and R_7 are each individually selected from the group consisting of H, an alkyl group having from 1 to 4 carbon atoms, and an alkoxy group having from one to 4 carbon atoms.

62. (Currently amended) A positive-acting photoresist composition comprising a base resin represented by the general formula:





wherein R_1 is selected from the group consisting of –H and $–CH_3$;

R_2 is selected from the group consisting of –H, an alkyl group having from 1 to 4 carbon atoms, and an alkoxy group having from 1 to 4 carbon atoms;

R_3 is –H, or a hydrophilic-enhancing moiety selected from the group consisting of a hydroxyl group –OH, a keto group =O, carboxylic acid group –COOH, and alkoxy group $–OR_4$, and a group $–OC(O)OR_4$;

R_4 is $–CH_3$ or $–C_2H_5$;

a is 0.25 to 0.75;

b = 1 – a; and

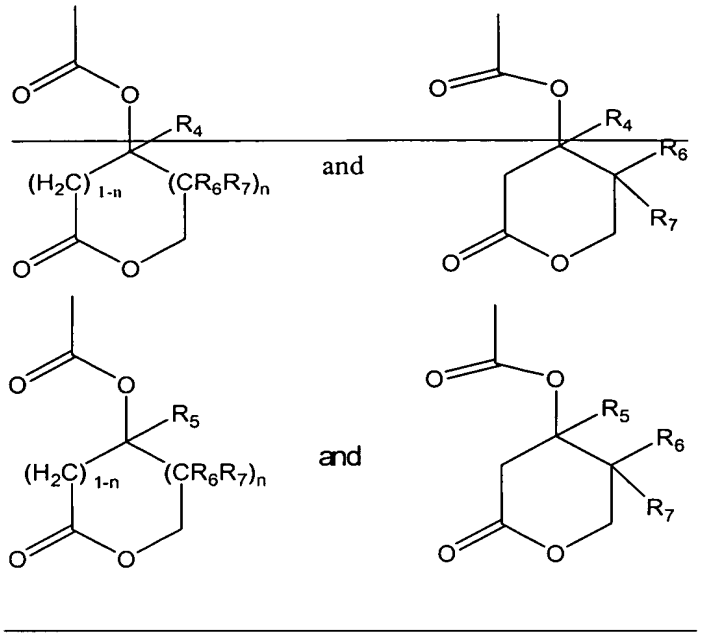
P_1 is a non-diamondoid, acid-cleavable pendant group.

63. (Cancelled)

64. (Cancelled)

65. (Original) The photoresist composition of claim 62, wherein P_1 is a lactone-containing pendant group.

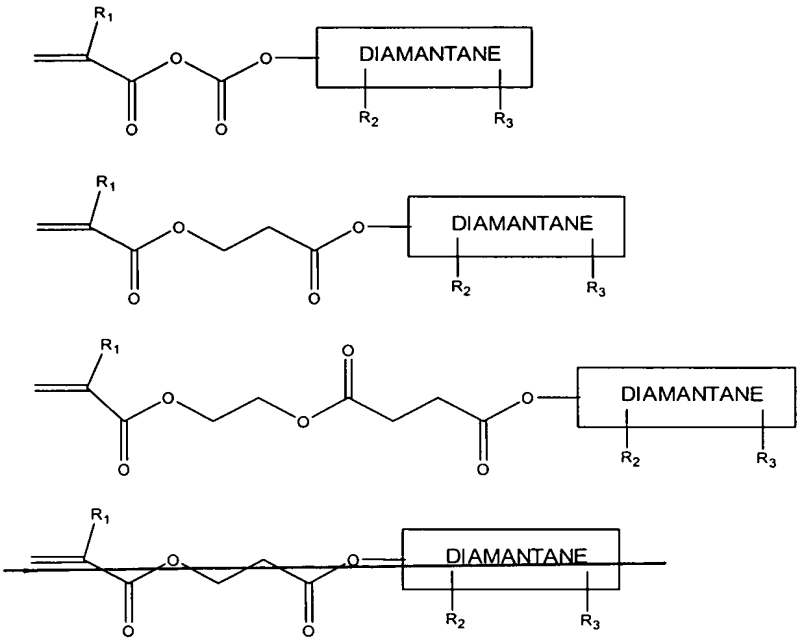
66. (Currently amended) The photoresist composition of claim 62, wherein P_1 is selected from the group consisting of:



wherein n is 0 or 1; and

~~R_4~~ $\underline{R_5}$, R_6, and R_7 are each individually selected from the group consisting of H, an alkyl group having from 1 to 4 carbon atoms, and an alkoxy group having from 1 to 4 carbon atoms.`

67. (Currently amended) A positive-acting photoresist composition comprising a base resin polymerized from any of the following monomers:



wherein R_1 is selected from the group consisting of –H and $-CH_3$;

R_2 is selected from the group consisting of –H, an alkyl group having from 1 to 4 carbon atoms, and an alkoxy group having from 1 to 4 carbon atoms;

R_3 is –H, or a hydrophilic-enhancing moiety selected from the group consisting of a hydroxyl group –OH, a keto group =O, carboxylic acid group –COOH, and alkoxy group $-OR_4$, and a group $-OC(O)OR_4$;

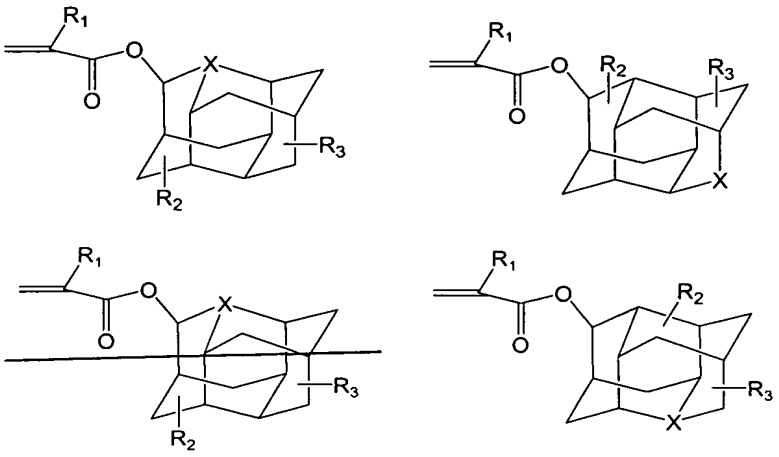
R_4 is $-CH_3$ or $-C_2H_5$.

68. (Original) The photoresist composition of claim 67, further including a monomer having adamantane as a pendant group.

69. (Original) The photoresist composition of claim 67, further including a monomer having a diamondoid pendant group.

70. (Cancelled)

71. (Currently amended) ~~The photoresist composition of claim 70, wherein the~~ A positive-acting photoresist composition comprising a base resin ~~is~~ polymerized from any of the following monomers:



wherein R_1 is selected from the group consisting of –H and $–CH_3$;

R_2 is selected from the group consisting of –H, an alkyl group having from 1 to 4 carbon atoms, and an alkoxy group having from 1 to 4 carbon atoms;

R_3 is –H, or a hydrophilic-enhancing moiety selected from the group consisting of a hydroxyl group –OH, a keto group =O, carboxylic acid group –COOH, and alkoxy group $–OR_4$, and a group $–OC(O)OR_4$;

R_4 is $–CH_3$ or $–C_2H_5$;

X is selected from the group consisting of oxygen, nitrogen, boron, and sulfur.

72. (Cancelled)

73. (Currently amended) The photoresist composition of any of claims 43, 47, 54, 62, 67, or 71, wherein the average ~~Onichi~~ Ohnishi number of any of the diamondoid containing monomers is greater than about 3.

74. (Original) The photoresist composition of any of claims 43, 47, 54, 62, 67, or 71, wherein the average value of the solubility parameter of the base resin, in units of $cal^{0.5}/cm^{1.5}$, ranges from about 8 to 13.

75. (Original) The photoresist composition of any of claims 43, 47, 54, 62, 67, or 71, further including a photoacid generator selected from the group consisting of an onium salt, a diazonium salt, an ammonium salt, a phosphonium salt, an iodonium salt, a sulfonium salt, a selenonium salt, an arsonium salt, an organic halogeno compound, and an organo-metal/organic halide compound.

76. (Currently amended) The photoresist composition of claim 75, wherein the photoacid generator has an ~~o-nitorbenzyl~~ o-nitrobenzyl type protecting group.

77. (Original) The photoresist composition of claim 75, wherein the photoacid generator generates a sulfonic acid upon photolysis.

78. (Original) The photoresist composition of claim 75, wherein the amount of the photoacid generator in the composition ranges from about 0.01 to 30 weight percent.

79. (Original) The photoresist composition of any of claims 43, 47, 54, 62, 67, or 71, wherein the composition further comprises an additive selected from the group consisting of a surface active agent, an organic basic compound, an acid decomposable dissolution inhibiting compound, a dye, a plasticizer, a photosensitizer, a compound promoting solubility in a developing solution, and additives comprising hydrophilic diamondoid derivatives.

80. (Original) The photoresist composition of any of claims 43, 47, 54, 62, 67, or 71, wherein the composition further includes a solvent selected from the group consisting of ethylene dichloride, cyclohexanone, cyclopentanone, 2-heptanone, γ-butyrolactone, methyl ethyl ketone, ethylene glycol monomethyl ether, ethylene glycol monoethyl ether, 2-methoxyethyl acetate, ethylene glycol monoethyl ether acetate, propylene glycol monomethyl ether (PGME), propylene glycol monomethyl ether acetate (PGMEA), ethylene carbonate, toluene, ethyl acetate, butyl acetate, methyl lactate, ethyl lactate, methyl methoxypropionate,

ethyl ethoxypropionate, methyl methoxypropionate, ethyl pyruvate, propyl pyruvate, N,N-dimethylformamide, dimethylsulfoxide, N-methylpyrrolidone, and tetrahydrofuran.

Claims 81-96. (Canceled)